

WHAT IS CLAIMED IS:

1. An image display apparatus comprising:

a plurality of thin display devices, each having a communication unit for transmitting and receiving image data expressing an image and a display unit for displaying an image based on the image data received by the communication unit; and

a holding stand, having a transmission unit for transmitting the image data to the thin display devices, and for substantially vertically holding the plurality of thin display devices.

2. An image display apparatus according to claim 1, wherein the holding stand holds the thin display devices such that the thin display devices are stacked on each other.

3. An image display apparatus according to claim 1, wherein the holding stand includes a holding unit which can be attached to and detached from the holding stand while the holding stand holds the thin display devices.

4. An image display apparatus according to claim 1, wherein the holding stand further includes an input unit which can input a designation including an image display designation to the display unit.

5. An image display apparatus according to claim 1, wherein the holding stand further includes an adding unit for adding, to the image data, page information expressing a page to be displayed in the plurality of thin display devices and page

position information expressing a current page position of the image data by updating pages, and transmits the image data, to which the page information and the page position information have been added by the adding unit, to the thin display device by the transmission unit;

and the thin display devices further include a decision unit for comparing the page information and the page position information of the image data received by the communication unit with each other to decide whether or not the page information and the page position information coincide with each other, an updating unit for updating the page position information after the decision made by the decision unit, and a sending unit for sending the image data, to which the page information and the page position information updated by the updating unit have been added, to the thin display device of the subsequent page or the holding stand.

6. An image display apparatus according to claim 5, wherein the holding stand further includes a storage unit for storing image data related to images displayed on the plurality of held thin display devices and the page information and the page position information added to the image data.

7. An image display apparatus according to claim 6, wherein when an image has been displayed on a thin display device held by the holding stand, the adding unit adds the page information and the page position to the image data based on the image data

which is stored in the storing unit and to which the page information and the page position information have been added, such that the latest image is on a frontmost surface.

8. An image data writing method for writing image data in a plurality of thin display devices in a state in which the plurality of detachable thin display devices are stacked on each other and held, the method comprising the steps of:

when write designation is performed, writing image data expressing an image which has already been written in the plurality of thin display devices in thin display devices respectively located one surface behind thin display devices in which the image data is already written; and

writing the latest image data designated to be written in a thin display device located at a frontmost surface of the plurality of thin display devices.

9. A thin display file including a plurality of thin display devices each having a display unit for displaying an image based on image data expressing an image, and a host device for holding the plurality of thin display devices such that pages of the thin display devices are connected in series with each other and for sequentially transmitting the image data to the plurality of thin display devices, wherein:

the host device includes

an adding unit for adding, to the image data, page information expressing a page to be displayed in the plurality

of thin display devices held as a plurality of pages and page position information expressing a current page position of the image data by updating pages, and

a transmission unit for transmitting the image data, to which the page information and the page position information have been added by the adding unit to the thin display devices; and

each of the thin display device includes

a receiving unit for receiving the image data to which the page information and the page position information have been added,

a decision unit for comparing the page information and the page position information of the image data received by the receiving unit with each other to decide whether or not the page information and the page position information coincide with each other,

a control unit for controlling the display of the display unit based on a decision result of the decision unit,

an updating unit for updating the page position information after the decision by the decision unit, and

a sending unit for sending the image data, to which the page information and the page position information updated by the updating unit have been added, to the thin display device of the subsequent page or the host device.

10. A thin display file according to claim 9, wherein the host

device includes an accumulation unit for accumulating image data expressing images to be displayed on the thin display devices, and an input unit for selecting the image data accumulated in the accumulation unit and inputting display designations including the page information.

11. A thin display file according to claim 9, wherein the thin display devices have the display units on front and rear surfaces thereof, the adding unit further adds, to the image data, front/rear information expressing the front and rear of a thin display device which is to display an image, and the control unit controls display on the display units on the front and rear surfaces of the thin display device based on the decision result of the decision unit and the front/rear information.

12. A thin display file according to claim 9, wherein in the series connection, connection sections through which the pages are electrically connected when the plurality of pages of the thin display devices are stacked on each other are arranged on the front surfaces and rear surfaces of the thin display devices, and host connection sections are arranged at positions at the host device corresponding to the connection sections and are connected to the connection sections.

13. A data communication method for a thin display file including a plurality of thin display devices each having a display unit for displaying an image based on image data

expressing an image and a host device for holding a plurality of pages of the thin display devices such that the pages are connected in series with each other and for sequentially transmitting the image data to the plurality of thin display devices, wherein:

the host device adds, to the image data, page information expressing a page to be displayed in the plurality of thin display devices held in the host device and page position information expressing a current page position of the image data by updating pages and sequentially transmits the image data to the thin display devices held in the host device; and

the thin display devices of the plurality of pages held in the host device receive the image data to which the page information and the page position information have been added, display images on the display units based on the image data in which the page information and the page position information of the image data coincide with each other, update the page position information, and sequentially transmit image data in which the page position information is updated to the thin display devices of the subsequent pages or the host device.

14. A data communication method according to claim 13, wherein, when the thin display devices have the display units on front and rear surfaces thereof, the host device further adds, to the image data, front/rear information expressing the front and rear of a thin display device which is to display an image, in

addition to the page information and the page position information, and each thin display device displays images on the display units on the front and rear surfaces based on the image data in which the page information and the page position information coincide with each other and the front/rear information.

15. A thin display file including a plurality of thin display devices each having a display unit for displaying an image based on image data expressing an image, and a host device for holding the plurality of thin display devices such that pages of the thin display devices are connected in series with each other and for sequentially transmitting the image data to the plurality of thin display devices, wherein:

the host device includes

an adding unit for adding, to the image data, page information expressing a page to be displayed in the plurality of thin display devices held as a plurality of pages, and

a transmission unit for transmitting the image data, to which the page information has been added by the adding unit, to the thin display devices; and

each of the thin display devices includes

a receiving unit for receiving the image data to which the page information has been added,

a decision unit for comparing the page information of the image data received by the receiving unit and page setting

information preset for each thin display device depending on the series connections between the thin display devices with each other to decide whether or not the page information and the page setting information coincide with each other,

a control unit for controlling the display of the display units based on a decision result of the decision unit, and

a sending unit for sending the image data, to which the page information has been added, to the thin display device of the subsequent page or the host device.

16. A data communication method for a thin display file including a plurality of thin display devices each having a display unit for displaying an image based on image data expressing an image, and a host device for holding a plurality of pages of the thin display devices such that the pages are connected in series with each other and for sequentially transmitting the image data to the plurality of thin display devices, wherein:

the host device adds, to the image data, page information expressing a page to be displayed in the plurality of thin display devices held in the host device and sequentially transmits the image data to the thin display devices held in the host device; and

the thin display devices of the plurality of pages held in the host device receive the image data to which the page information has been added, display images on the display units



based on image data in which the page information of the image data and page setting information preset for each thin display device depending on a series connection between the thin display devices coincide with each other, and sequentially transmit the image data, to which the page information has been added, to the thin display device of the subsequent page or the host device.

17. An image display apparatus comprising:

- a display unit having a display surface for displaying an image;

- a first coupling section for coupling with another first image display apparatus such that the display surface of the image display apparatus and a display surface of the first image display apparatus face the same direction and are located on a common plane or coupling with an information processing device for outputting display information including image information expressing an image to be displayed on the display surface of the display unit, and for making it possible to input the display information from the first image display apparatus or the information processing device which is coupled, by coupling with the first image display apparatus or the information processing device;

- a second coupling section for coupling with another second image display apparatus such that the display surface of the image display apparatus and a display surface of the

second image display apparatus face the same direction and are located on a common plane, and for making it possible to output display information including image information expressing an image to be displayed by the second image display apparatus to the second image display apparatus, by coupling with the second image display apparatus; and

a display control unit for performing control for displaying, on the display surface of the display unit, an image expressed by the image information included in the display information input from the first image display apparatus or the information processing device coupled with the image display apparatus via the first coupling section.

18. An image display apparatus according to claim 17, further comprising a specifying unit for specifying a display direction of an image with respect to the display surface of the display unit.

19. An image display apparatus according to claim 17, further comprising a change designation input unit for inputting a change designation for changing a display direction of an image displayed on the display surface of the display unit, wherein, when a change designation is input by the change designation input unit, the display control unit changes a display direction of the image depending on the change designation.

20. An image display apparatus according to claim 17, further comprising an exchange designation input unit for inputting an

exchange designation for exchanging an image displayed by another image display apparatus coupled with the image display apparatus via at least one of the first coupling section and the second coupling section and an image displayed on the display surface of the display unit, wherein the display control unit performs control for exchanging the image displayed by the other image display apparatus for the image displayed on the display surface of the display unit depending on the exchange designation when the exchange designation is input by the exchange designation input unit.

21. An image display system comprising:

a plurality of image display apparatuses according to claim 17 coupled to each other via the first coupling sections and the second coupling sections; and

an information processing device including a coupling section which is coupled to the first coupling section of any one of the plurality of image display apparatuses and which makes it possible to output the display information to the image display apparatus by being coupled thereto, an information forming unit for forming the display information to be output to the image display apparatus coupled to the information processing device via the coupling section, and an information output unit for outputting the display information formed by the information forming unit to the image display apparatus coupled to the information processing device via the coupling

section.

22. An image display system according to claim 21, wherein:

the information processing device further includes a size information input unit for inputting to the information processing device, image size information expressing the sizes of images displayed on the plurality of image display apparatuses and display size information expressing display sizes of the display units of the plurality of image display apparatuses; and

the information forming unit of the information processing device forms the display information so as to include image therein image information expressing the images based on the image size information and the display size information input by the size information input unit such that the image information is divided into units of regions to be displayed on the display surfaces in the plurality of image display apparatuses.

23. An image display system according to claim 21, wherein:

the information forming unit of the information processing device forms the display information so as to include therein pieces of image information expressing images displayed by the plurality of image display apparatuses such that the pieces of image information are related to display destination information expressing the image display apparatus on which the images are displayed, and so as to include therein display

destination update information serving as information which coincides with the display destination information expressing an image display apparatus serving as an output destination of the display information due to updating of the display information in the image display apparatus to which the display information is input; and

the display control units of the plurality of image display apparatuses perform control such that the image expressed by the image information related to the display destination information which coincides with the display destination update information included in the input display information is displayed on the display surface of the display unit, and update the display destination update information such that the display destination update information coincides with the display destination information expressing an image display apparatus serving as an output destination of the display information.

24. An image display system according to claim 21, wherein:

the plurality of image display apparatuses further include storage units in which identification information different from the identification information of other image display apparatuses is stored;

the information forming unit of the information processing device forms the display information so as to include therein image information expressing an image displayed on at

least one display surface of the plurality of image display apparatuses and the identification information of the image display apparatus for displaying the image, such that the image information and the identification information are related to each other; and

the display control units of the plurality of image display apparatuses perform control such that only an image expressed by image information related to identification information which coincides with the identification information stored in the storage unit is displayed on the display surfaces of the display units.

25. An image display system according to claim 23, wherein the plurality of image display apparatuses further include information deleting units for deleting image information expressing images displayed by the display units and information related to the image information from the display information.

26. An image display system according to claim 21, wherein:

the shapes of the display surfaces of the image display apparatuses are rectangular;

when an image expressed by image information included in the display information is rectangular, the information forming unit of the information processing device forms the display information so as to include direction information indicating a longitudinal direction of the image; and

when the direction information is included in the display information, the display control units of the plurality of image display apparatuses perform control such that the image expressed by the image information included in the display information is displayed on the display surfaces so as to make the longitudinal direction indicated by the direction information coincide with longitudinal directions of the display surfaces.